

What is claimed is :

1. A method for accessing data from a storage medium according to requirements of a host, the storage medium storing a plurality of data blocks, wherein each of the data blocks comprises a plurality of data sectors and an error correction code (ECC) for recovering errors of the each of the data blocks, and each of the data sectors comprises an error detection code (EDC) for detecting correctness of the each of the data sectors, the method comprising steps of:
 - fetching a data block from the data blocks of the storage medium;
 - recovering errors of the data block by the ECC of the data block;
 - detecting correctness of each data sector of the data block by the EDC of the each data sector of the data block; and
 - performing following sub-steps when at least one incorrect data sector is detected:
 - storing correct data sectors of the data block;
 - re-fetching the data block from the storage medium;
 - overwriting corresponding locations of the re-fetched data block with the stored correct data sectors; and
 - re-performing the recovering step and the detecting step to ensure correctness of all the data sectors.
2. The method of claim 1, wherein the storage medium is accessed by one of a CD-ROM drive, a DVD-ROM drive, a DVD player and a DVD±RW drive.
3. The method of claim 1, wherein the ECC comprises outer-code parity (PO) data and inner-code parity (PI) data encoded in a form of Reed Solomon Product Code (RSPC).
4. The method of claim 1, further comprising:
 - transferring the data block to the host when all the data sectors of the

data block are correct.

5. The method of claim 1, wherein the re-fetching step comprises re-fetching the data block to store the re-fetched data block into a same location of a memory occupied by the previously fetched data block.

5 6. The method of claim 6, wherein the storing sub-step comprises storing the correct data sectors in a specific memory block having a location different with that of the data block is stored.

7. A method for assuring data correctness in an optical electronic system, comprising steps of:

10 fetching a data block, wherein the data block comprises a plurality of data sectors, and at least one of the data sectors is incorrect;

storing correct ones of the data sectors in a specific memory block;

re-fetching the data block; and

15 overwriting corresponding locations of the re-fetched data block with the stored correct data sectors.

8. The method of claim 7, further comprising a procedure for detecting correctness of the data sectors, wherein the procedure comprises:

recovering errors of the data block by an error correction code (ECC) of the data block; and

20 detecting correctness of each of the data sectors by the error detection code (EDC) of the each of the data sectors.

9. The method of claim 8, further comprising:

repeatedly performing the procedure, the storing step, the re-fetching step and the overwriting step until all the data sectors are correct.

25 10. The method of claim 9, further comprising:

transferring the data block to a host coupled to the optical electronic system when all the data sectors are correct.

11. The method of claim 7, wherein the optical electronic system comprises one of a CD-ROM drive, a DVD-ROM drive, a DVD player and a DVD±

RW drive.

12.The method of claim 7, wherein the re-fetching step comprises re-fetching the data block to store the re-fetched data block into a same location of a memory occupied by the previously fetched data block.

5 13.The method of claim 12, wherein the specific memory block has a location different with that of the data block is stored within the memory.

14.A method for assuring data correctness in an optical electronic system, comprising steps of:

10 fetching a data block from an optical medium to store the data block in a first memory block, wherein the data block comprises a plurality of data sectors, and at least one of the data sectors is incorrect;

storing correct ones of the data sectors in a second memory block;

re-fetching the data block to overwrite a same location occupied by the previously fetched data block; and

15 overwriting corresponding locations of the re-fetched data block with the correct data sectors stored in the second memory block.

15.The method of claim 14, further comprising:

transferring the data block to a host coupled to the optical electronic system when all the data sectors are correct.

20 16.The method of claim 14, further comprising a procedure for detecting correctness of the data sectors, wherein the procedure comprises:

recovering errors of the data block by an error correction code (ECC) of the data block; and

25 detecting correctness of each of the data sectors by the error detection code (EDC) of the each of the data sectors.

17.The method of claim 16, wherein the re-fetching step, the overwriting step, the procedure are repeated until all the data sectors of the data block are correct.

18.The method of claim 14, wherein the optical electronic system comprises

one of a CD-ROM drive, a DVD-ROM drive, a DVD player and a DVD±
RW drive.

19. The method of claim 14, wherein the first memory block has a location
different with that of the second memory block within a memory of the
5 optical electronic system.